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GLENN PATENT GROUP 3475 EDISON WAY, SUITE L MENLO PARK, CA 94025			PWJ, JEFFREY C	
			ART UNIT	PAPER NUMBER
			3628	
DATE MAILED: 11/20/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/613,685

Applicant(s)

CAZALET ET AL.

Examiner

Jeffrey Pwu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-60 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-60 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 6-9. 6) ☐ Other: \_\_\_\_\_

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### **DETAILED ACTION**

1. This action is responsive to the application, filed 2000-07-11
2. The disposition of claims is: claims 1-60 are pending as filed. Claims 1, 39, 57, 58, 59, and 60 are independent.
3. The group art unit of the Examiner handling your case has changed. The new art unit is **3628**. Please use current art unit on all correspondence to help us route your case in a timely fashion.

### **Claim Rejections - 35 USC § 102**

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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5. Claims 1-60 are rejected under 35 U.S.C. 102(e) as being anticipated by Takriti (U.S. 6,021,402).

Takriti discloses claims:

1. A method of planning a device consuming an ephemeral, fungible commodity based upon a knowledge interval collection comprising at least one knowledge interval of said ephemeral, fungible commodity at a time interval containing a cost, comprising the steps of:

determining said ephemeral, fungible commodity needs over a planning time interval (risk management system schedules); and

examining said knowledge interval collection based upon said ephemeral, fungible commodity needs over said planning time interval to create a device operating schedule (abstract).

2. A method as in Claim 1, further comprising the step of:

creating a first knowledge interval of said ephemeral, fungible commodity at a first time interval containing a first cost in said knowledge interval collection (risk management system schedules).

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3. A method as in Claim 2,

wherein the step creating said first knowledge interval is comprised of the steps of:

receiving a knowledge interval creation message to create a received knowledge interval creation message (scenario 1); and

creating said first knowledge interval of said ephemeral, fungible commodity at said first time interval containing said first cost in said knowledge interval collection based upon said received knowledge interval creation message (figs. 11-14).

4. A method as in Claim 3,

wherein the step creating said first knowledge interval is comprised of the steps of:

processing said received knowledge interval creation message to create a processed knowledge interval of said ephemeral, fungible commodity at said first time interval containing said first cost; and

inserting said processed knowledge interval of said ephemeral, fungible commodity at said first time interval containing said first cost into said knowledge interval collection as said first knowledge interval of said ephemeral, fungible commodity at said first time interval containing said first cost ("Fuel cost and its availability: To translate the curves of FIGS. 1A and 1B into cost, it is assumed the knowledge of

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the cost per BTU for each fuel used in generation (see FIGS. 1A and 1B and FIGS. 6A and 6B)”)

5. A method as in Claim 3,

wherein said knowledge interval collection comprises said second knowledge interval of said ephemeral, fungible commodity at said first time interval containing a second cost;

wherein the step creating said first knowledge interval is comprised of the step of:

replacing said second knowledge interval with said first knowledge interval in said knowledge interval collection (scenario 2).

6. A method as in Claim 3,

wherein said knowledge interval collection further comprises a first of said knowledge intervals of said ephemeral, fungible commodity at a time interval collection containing at least one time interval and containing a cost (figs. 8 & 13A).

7. A method as in Claim 6,

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wherein said knowledge interval collection further comprises a first of said knowledge intervals of said ephemeral, fungible commodity at a time interval collection further containing at least two time intervals and containing a cost (figs. 8 & 13A).

8. A method as in Claim 6,

wherein said knowledge interval collection comprises a second of said knowledge intervals of said ephemeral, fungible commodity at a second of said time intervals containing a second of said costs;

wherein said second time interval more than contains said first time interval; and

wherein the step creating said first knowledge interval is comprised of the steps of:

determining a remaining time interval collection of at least one remaining

time interval wherein said remaining time intervals collectively exactly contain said second time interval not contained in said first time interval;

replacing said second time interval of said second knowledge interval with said remaining time interval collection in said knowledge interval collection; and inserting said first knowledge interval of said ephemeral, fungible commodity at said first time interval containing said first cost. (See figs. 8-15)

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9. A method as in Claim 6,

wherein said knowledge interval collection comprises a second of said knowledge intervals of said ephemeral, fungible commodity at a second of said time intervals containing a second of said costs;

wherein said first time interval more than contains said second time interval;

wherein the step creating said first knowledge interval is further comprised the step of:

deleting said second knowledge interval from said first knowledge interval (col.7, line 57- col.12 line 28)

10. A method as in Claim 2, further comprising the step of:

removing said first knowledge interval of said ephemeral, fungible commodity at said first time interval containing said first cost from said knowledge interval collection (col.7, line 57-col.13 line 44).

11. A method as in Claim 10,

wherein the step removing said first knowledge interval is comprised of the steps of:



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receiving a knowledge interval removal message to create a received knowledge interval removal message; and

removing said first knowledge interval of said ephemeral, fungible commodity at said first time interval containing said first cost from said knowledge interval collection based upon said received knowledge interval removal message (col.7, line 57-col.13 line 44).

12. A method as in Claim 10, further comprising the step of: establishing a real time; and wherein the step removing said first knowledge interval is comprised of the steps of: determining whether said first time interval of said first knowledge interval precedes said real time; and removing said first knowledge interval of said ephemeral, fungible commodity at said first time interval containing said first cost from said knowledge interval collection whenever said first time interval of said first knowledge interval precedes said real time (col.7, line 57-col.13 line 44).

13. A method as in Claim 10, further comprising the steps of: receiving a first knowledge message to create a first received knowledge message;

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processing said first received knowledge message comprising:

examining said first received knowledge message to create a message type belonging to a knowledge message type collection comprising create-knowledge-interval, remove-knowledge-interval;

creating a first knowledge interval of said ephemeral, fungible commodity at a first time interval containing a first cost in said knowledge interval collection based upon said first received knowledge message whenever said message type of said first received knowledge message is create knowledge interval; and

removing said first knowledge interval of said ephemeral, fungible commodity at said first time interval containing said first cost in said knowledge interval collection based upon said first received knowledge message whenever said message type of said first received knowledge message is remove-knowledge-interval (col.7, line 57-col.13 line 44).

14. A method as in Claim 13,

wherein the step examining said first received knowledge message is further comprised of the step of:

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examining said first received knowledge message to create a message type containing at least one member of said knowledge message type collection; wherein the step creating a first knowledge interval further comprises the step of:

creating a first knowledge interval of said ephemeral, fungible commodity at a first time interval containing a first cost in said knowledge interval collection based upon said first received knowledge message whenever said message type of said first received knowledge message contains create-knowledge-interval;

wherein the step removing said first knowledge interval is further comprised of the step of: removing said first knowledge interval of said ephemeral, fungible commodity at said first time interval containing said first cost in said knowledge interval collection based upon said first received knowledge message whenever said message type of said first received knowledge message contains remove knowledge interval (col.7, line 57-col.13 line 44).

15. A method as in Claim 2, further comprising the step of:

maintaining a bid interval collection of bid intervals of said ephemeral, fungible commodity, each comprised of a bid price, a bid amount; and a bid time interval (col.3, line 5-col.5, line 19)

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16. A method as in Claim 15,

wherein the step maintaining said bid interval collection is comprised of the steps of:

making a first bid of a first bid amount at a first bid price for a first time interval to create a first bid of said bid interval collection comprising said first bid amount as said bid amount, said first bid price as said bid price, said first time interval as said bid time interval; and committing of said first bid interval to create a committed first bid interval of said bid interval collection comprising said first bid amount as said bid amount, said first bid price as said bid price, said first time interval as said bid time interval and said committed flag; and

wherein each of said knowledge intervals of said knowledge interval collection further contains an amount of said ephemeral, fungible commodity; and wherein the step creating said first knowledge interval is comprised of the step of:

creating said first knowledge interval of said knowledge interval collection based upon said first committed bid interval of said bid interval collection (col.7, line 57-col.13 line 44).

17. A method as in Claim 16,

wherein the step creating said first knowledge interval is further comprised of the steps of:

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setting said amount of said first knowledge interval by said first bid amount of said first committed bid interval;

setting said first time interval of said first knowledge interval by said first bid time interval of said first committed bid interval; and

setting said first cost of said first knowledge interval by said first bid price of said first committed bid interval (col.7, line 57-col.13 line 44).

18. A method as in Claim 16,

wherein the step determining said ephemeral, fungible commodity needs is further comprised of the step of:

examining an equipment usage collection comprised of equipment usage entries each containing a delivery time and a need schedule for said ephemeral, fungible commodity to create said ephemeral, fungible commodity needs over said planning time interval comprising an amount.

wherein said ephemeral, fungible commodity needs over said planning time interval further comprises a cost limit; and

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wherein the step making said first bid is further comprised of the step of: making said first bid of said first bid amount at said first bid price for said first time interval to create said first bid of said first bid amount at said first bid price for said first time interval of said ephemeral, fungible commodity (col.7, line 57-col.13 line 44).

20. A method as in Claim 19,

wherein examining said knowledge interval collection based upon said ephemeral, fungible commodity needs over said planning time interval to create said device operating schedule comprises:

determining an equipment usage plan containing an equipment usage item comprised of an activation time and an action belonging to an action collection comprising start-action, stop-action and throttle-action.

21. A method of controlling said device consuming said ephemeral, fungible commodity based upon said knowledge interval collection comprising at least one of said knowledge interval of said ephemeral, fungible commodity at said time interval containing said cost, comprising:

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said method of planning said device consuming said ephemeral, fungible commodity as recited in Claim 20 to create said device operating schedule; and the step of: operating said device based upon said device operating schedule (col.25, line 20-col.27, line 5).

22. A method as in Claim 21, wherein the step operating said device comprises at least one step of the collection comprising the steps of:

starting said device based upon said device operating schedule; stopping said device based upon said device operating schedule; and throttling said device based upon said device operating schedule (col.25, line 20-col.27, line 5).

23. A method as in Claim 22, wherein the step operating said device comprises the steps of: starting said device based upon said device operating schedule; stopping said device based upon said device operating schedule; and throttling said device based upon said device operating schedule (col.25, line 20-col.27, line 5).

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24. A method as in Claim 23,

wherein the step starting said device comprises the step of:

starting said device based upon said at least one of said equipment usage item of said equipment usage plan comprising a start-action;

wherein the step stopping said device comprises the step of:

stopping said device based upon at least one of said equipment usage item of said equipment usage plan comprising a stop-action; and

wherein the step throttling said device comprises the step of:

throttling said device based upon at least one of said equipment usage item of said equipment usage plan comprising a throttle-action (col.25, line 20-col.27, line 5).

25. A method as in Claim 24,

wherein said equipment usage item comprised of said throttle-action is further comprised of a throttle-setting; and

wherein the step throttling said device is further comprised of the step of: throttling said device based upon at least one of said equipment usage item of said equipment usage plan comprising said throttle-action and said throttle-setting (col.25, line 20-col.27, line 5).



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26. A method as in Claim 24,  
wherein said equipment usage item comprised of said start-action is further comprised of a throttle-setting (col.25, line 20-col.27, line 5); and

25 wherein the step starting said device is further comprised of the step of: starting said device based upon at least one of said equipment usage item of said equipment usage plan comprising said start-action and said throttle setting (col.25, line 20-col.27, line 5).

27. A method as in Claim 22,  
wherein said device includes a device collection comprised of at least two devices consuming said ephemeral, fungible commodity based upon said knowledge interval collection comprising at least one of said knowledge-intervals of said ephemeral, fungible commodity at said time interval containing said cost; and further comprising:  
said method of planning said device consuming said ephemeral, fungible commodity based upon said knowledge interval collection comprising at least one knowledge interval of said ephemeral, fungible commodity at said time interval containing said cost to create said device collection operating schedule; and the step of:

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operating said device collection based upon said device collection operating schedule (figs. 7-15).

28. A method as in Claim 27,

wherein the step operating said device collection is further comprised of the steps of:

starting at least one of said devices of said device collection based upon said device operating schedule;

stopping at least one of said devices of said device collection based upon said device operating schedule; and

throttling at least one of said devices of said device collection based upon said device operating schedule (col.25, line 20-col.27, line 5).

29. A method as in Claim 21, further comprising the step of:

metering consumption by said device of said ephemeral, fungible commodity.

wherein the step metering consumption by said device is further comprised of the steps of:

measuring a consumption rate of said device of said ephemeral, fungible commodity within a metering time interval;

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determining said cost of said ephemeral, fungible commodity within said metering time interval based upon said knowledge time interval collection to create a metering cost factor of said ephemeral, fungible commodity during said metering time interval; and calculating a consumption cost for said device based upon said consumption rate of said device of said ephemeral, fungible commodity with said metering time interval, and based upon said metering cost factor of said ephemeral, fungible commodity during said metering time interval and based upon said metering time interval to create a consumption cost for said device consuming said ephemeral, fungible commodity over said metering time interval (figs.2-3, 6A, 6B, 9A, 9b, and 11).

31. A method as in Claim 30,

wherein the step metering consumption by said device is further comprised of the steps of: maintaining an accumulated cost for said device of said ephemeral, fungible commodity; and

updating said accumulated cost for said device of said ephemeral, fungible commodity based upon said consumption cost for said device consuming said ephemeral, fungible commodity over said metering time interval (col.25, line 20-col.27, line 5).

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32. A method as in Claim 1, (See col.4, line 50-col.27, line 5)

wherein said device consumes a second ephemeral, fungible commodity; wherein said method of planning said device is further comprised of:

said method of planning said device consuming said ephemeral, fungible commodity and said second ephemeral, fungible commodity based upon said knowledge interval collection comprising at least one knowledge interval of said ephemeral, fungible commodity at a time interval containing a cost and based upon a second knowledge interval collection comprising at least one knowledge interval of said second ephemeral, fungible commodity at a time interval containing a cost; and

wherein the step determining said ephemeral, fungible commodity needs is further comprised of the step of:

determining said second ephemeral, fungible commodity needs over said planning time interval; and

wherein the step examining said knowledge interval collection to create said device operating schedule is further comprised of the step of:

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examining said knowledge interval collection based upon said ephemeral, fungible commodity needs over said planning time interval and said second ephemeral, fungible commodity needs over said planning time interval to create said device operating schedule.

33. A method as in Claim 1, (See col.4, line 50-col.27, line 5)

wherein said device generating a second ephemeral, fungible commodity; wherein said method of planning said device is further comprised of:

said method of planning said device consuming said ephemeral, fungible commodity and generating said second ephemeral, fungible commodity based upon said knowledge interval collection comprising at least one knowledge interval of said ephemeral, fungible commodity at a time interval containing a cost and based upon a second knowledge interval collection comprising at least one knowledge interval of said second ephemeral, fungible commodity at a time interval containing a price;

wherein the step determining said ephemeral, fungible commodity needs is further comprised of the step of:

determining said second ephemeral, fungible commodity needs over said planning time interval; and

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wherein the step examining said knowledge interval collection to create said device operating schedule is further comprised of the step of:

examining said knowledge interval collection based upon said ephemeral, fungible commodity needs and said second ephemeral, fungible commodity needs over said planning time interval to create a device operating schedule.

34. A method as in Claim 1, (See col.4, line 50-col.27, line 5)

wherein said device transports a second ephemeral, fungible commodity; wherein said method of planning said device is further comprised of:

said method of planning said device consuming said ephemeral, fungible commodity and generating said second ephemeral, fungible commodity based upon said knowledge interval collection comprising at least one knowledge interval of said ephemeral, fungible commodity at a time interval containing a cost and based upon a second knowledge interval collection comprising at least one knowledge interval of said second ephemeral, fungible commodity at a time interval containing a price;

wherein the step determining said ephemeral, fungible commodity needs is further comprised of the step of:

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determining said second ephemeral, fungible commodity needs over said planning time interval; and

wherein the step examining said knowledge interval collection to create said device operating schedule is further comprised of the step of:

examining said knowledge interval collection based upon said ephemeral, fungible commodity needs and said second ephemeral, fungible commodity needs over said planning time interval to create said device operating schedule.

35. A method as in Claim 1,  
wherein said ephemeral, fungible commodity is electricity (title).

36. A method as in Claim 35, (abstract)  
wherein said ephemeral, fungible commodity belongs to the collection comprising DC electricity and AC electricity.

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37. A program operating system supporting the method of Claim 1, comprising program steps residing in coupled accessible computer memory coupled to at least one computer of a computing system:

a program step supporting determining said ephemeral, fungible commodity needs over a planning time interval; and

a program step supporting examining said knowledge interval collection based upon said ephemeral, fungible commodity needs over said planning time interval to create a device operating schedule (col.4, line 50-col.27, line 5).

38. A computing system supporting the method of Claim 1 comprising:

at least one computer with accessibly coupled computer memory; and wherein a program operating system containing program steps residing in said accessibly coupled memory of said computer is comprised of the program steps of:

supporting determining said ephemeral, fungible commodity needs over a planning time interval; and

supporting examining said knowledge interval collection based upon said



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ephemeral, fungible commodity needs over said planning time interval to create a device operating schedule (See col.4, line 50-col.27, line 5).

(CLAIMS 39-60 ARE SIMILARITY REJECTED AS IN CLAIMS 1-38)

39. A control system controlling a device consuming an ephemeral, fungible commodity based upon a knowledge interval collection comprising at least one of said knowledge interval of said ephemeral, fungible commodity at said time interval containing said cost, comprising:

a computing system further comprised of at least one computer with accessibly coupled memory containing program steps of a program operating system;

wherein said program operating system is comprised of the program steps of:

determining said ephemeral, fungible commodity needs over a planning time interval;

examining said knowledge interval collection based upon said ephemeral, fungible commodity needs over said planning time interval to create a device operating schedule; and

operating said device based upon said device operating schedule.

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40. A control system as in Claim 39,

wherein said program operating system is further comprised of the program step of:

creating a first knowledge interval of said ephemeral, fungible commodity at a first time interval containing a first cost in said knowledge interval collection comprised of the program steps of:

receiving a knowledge interval creation message to create a received knowledge interval creation message containing said ephemeral, fungible commodity at said first cost at said first time interval; and

creating said first knowledge interval of said ephemeral, fungible commodity at said first time interval containing said first cost based upon said received knowledge interval creation message.

41. A control system as in Claim 40,

wherein said program operating system is further comprised of the program step of:

maintaining a bid interval collection of bid intervals of said ephemeral, fungible commodity, each comprising a bid price, a bid amount and a bid time interval.

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42. A control system as in Claim 41,

wherein the program step supporting maintaining said bid interval collection is further comprised of the program steps of:

making a first bid of a first bid amount at a first bid price for a first time interval to create a first bid of said bid interval collection comprising said first bid amount as said bid amount, said first bid price as said bid price, said first time interval as said bid time interval;

committing of said first bid interval to create a committed first bid interval of said bid interval collection comprising said first bid amount as said bid amount, said first bid price as said bid price, said first time interval as said bid time interval and said committed flag;

wherein each of said knowledge intervals of said knowledge interval collection further contains an amount of said ephemeral, fungible commodity; and wherein the program step creating said first knowledge interval is further comprised of the program step of:

creating said first knowledge interval of said knowledge interval collection based upon said first committed bid interval of said bid interval collection.

43. A control system as in Claim 42,

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wherein the program step supporting determining said ephemeral, fungible commodity needs is further comprised of the program step of:

examining an equipment usage collection comprised of equipment usage entries each containing a delivery time and a need schedule for said ephemeral, fungible commodity to create said ephemeral, fungible commodity needs over said time interval comprising an amount.

44. A control system as in Claim 43,

wherein said ephemeral, fungible commodity needs over said time interval is further comprised of a cost limit; and

wherein the program step supporting making said first bid is further comprised of the program step of:

making said first bid of said first bid amount at said first bid price for said first time interval to create said first bid of said bid interval collection comprising said first bid amount as said bid amount, said first bid price as said bid price, said first time interval as said bid time interval based upon said ephemeral, fungible commodity needs over said time interval comprising said amount and said cost limit.

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45. A control system as in Claim 44,

wherein the program step examining said knowledge interval collection is further comprised of the program step of:

determining an equipment usage plan containing an equipment usage item comprised of an activation time and an action belonging to an action collection comprising start-action, stop-action and throttle-action.

46. A control system as in Claim 39,

wherein the program step operating said device comprises at least one of the collection comprising the program steps of:

starting said device based upon said device operating schedule; stopping said device based upon said device operating schedule; and throttling said device based upon said device operating schedule.

47. A control system as in Claim 46,

wherein the program step operating said device is further comprised of the program steps of:

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starting said device based upon said device operating schedule; stopping said device based upon said device operating schedule; and throttling said device based upon said device operating schedule.

48. A control system as in Claim 46,

wherein said device includes a device collection comprised of at least two devices consuming said ephemeral, fungible commodity based upon said knowledge interval collection comprising at least one of said knowledge interval of said ephemeral, fungible commodity at said time interval containing said cost; and

wherein the program step examining said knowledge interval collection is further comprised of the program step of:

examining said knowledge interval collection based upon said ephemeral, fungible commodity needs over said planning time interval to create a device collection operating schedule; and

wherein said program operating system further comprises the program step of:

operating said device collection based upon said device collection operating schedule.

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49. A control system as in Claim 39,  
wherein said program operating system is further comprised of the program step of:  
metering consumption by said device of said ephemeral, fungible commodity.

50. A control system as in Claim 49,  
wherein the program step supporting metering consumption is further comprised of the  
program steps of:  
measuring a consumption rate of said device of said ephemeral, fungible commodity within  
a metering time interval;  
determining said cost of said ephemeral, fungible commodity within said metering time  
interval based upon said knowledge time interval collection to create a metering cost factor  
of said ephemeral, fungible commodity during said metering time interval; and  
calculating a consumption cost for said device based upon said consumption rate of said  
device of said ephemeral, fungible commodity with said metering time interval, and based  
upon said metering cost factor of said ephemeral, fungible commodity during said metering  
time interval and based upon said metering time interval to create a consumption cost for said  
device consuming said ephemeral, fungible commodity over said metering time interval.

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wherein the program step supporting metering consumption is further comprised of the program steps of:

maintaining an accumulated cost for said device of said ephemeral, fungible commodity; and  
updating said accumulated cost for said device of said ephemeral, fungible commodity based upon said consumption cost for said device  
consuming said ephemeral, fungible commodity over said metering time interval.

52. A control system as in Claim 39,

wherein said device consumes a second ephemeral, fungible commodity; to wherein said knowledge interval collection further comprises at least one knowledge interval of said ephemeral, fungible commodity at a time interval containing a cost and at least one knowledge interval of said second ephemeral, fungible commodity at said time interval containing a second cost;

wherein the program step determining said ephemeral, fungible commodity needs is further comprised of the program steps of:

determining said ephemeral, fungible commodity needs and said second ephemeral, fungible commodity needs over a planning time interval; and



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wherein the program step supporting examining said knowledge interval collection based upon said ephemeral, fungible commodity needs over said planning time interval to create a device operating schedule is further comprised of the program step of:

examining said knowledge interval collection based upon said ephemeral, fungible commodity needs and said second ephemeral, fungible commodity needs over said planning time interval to create a device operating schedule.

53. A computing system as in Claim 39,

wherein said device generates a second ephemeral, fungible commodity; wherein said knowledge interval collection is further comprised of a first of said knowledge interval of said ephemeral, fungible commodity at a time interval containing a cost and based upon a second of said knowledge interval of said

second ephemeral, fungible commodity at an overlapping time interval containing a price; wherein program operating system of planning said device consuming said ephemeral, fungible commodity based upon said knowledge interval collection further comprises:

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said program operating system of planning said device consuming said ephemeral, fungible commodity and generating said second ephemeral, fungible commodity based upon said first knowledge interval and based upon said second knowledge interval;

wherein the program step supporting determining said ephemeral, fungible commodity needs over said planning time interval is further comprised of the program step of:  
determining said second ephemeral, fungible commodity needs over said planning time interval; and

wherein the program step supporting examining said knowledge interval collection is further comprised of the program step of:  
examining said knowledge interval collection based upon said ephemeral, fungible commodity needs and said second ephemeral, fungible commodity needs over said planning time interval to create said device operating schedule.

54. A computing system as in Claim 39,

wherein said device transports a second ephemeral, fungible commodity; wherein said knowledge interval collection is further comprised of at least one knowledge interval of said ephemeral, fungible commodity at a first overlapping time interval containing a cost and a

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second knowledge interval of said second ephemeral, fungible commodity at a second overlapping time interval containing a price;

wherein said first overlapping time interval and said second overlapping time interval overlap said planning time interval;

wherein the program step determining said ephemeral, fungible commodity needs over said planning time interval is further comprised of the program step of:

determining said second ephemeral, fungible commodity needs over said planning time interval; and

wherein the program step examining said knowledge interval collection is further comprised of the program step of:

examining said knowledge interval collection based upon said ephemeral, fungible commodity needs and said second ephemeral, fungible commodity needs over said planning time interval to create a device operating schedule.

55. A computing system as in Claim 39,

wherein said ephemeral, fungible commodity is electricity.

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56. A computing system as in Claim 55,  
wherein said ephemeral, fungible commodity is a member of the collection comprising DC electricity and AC electricity.

57. A method of planning a device generating an ephemeral, fungible commodity based upon a knowledge interval collection comprising at least one knowledge interval of said ephemeral, fungible commodity at a time interval containing a price, comprising:

determining said ephemeral, fungible commodity needs over a planning time interval;  
and

examining said knowledge interval collection based upon said ephemeral, fungible commodity needs over said planning time interval to create a device operating schedule; and

wherein said ephemeral, fungible commodity is a member of the collection comprising DC electricity and AC electricity.

58. A computing system supporting planning a device generating an ephemeral, fungible commodity based upon a knowledge interval collection

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containing at least one knowledge interval of said ephemeral, fungible commodity at a time interval containing a price comprises:

at least one computer with coupled accessible computer memory;

wherein a program operating system containing program steps residing in said accessible coupled computer memory coupled to at least one computer of a computing system, is comprised of the program steps of:

determining said ephemeral, fungible commodity needs over a planning time interval; and  
examining said knowledge interval collection based upon said ephemeral, fungible commodity needs over said planning time interval to create a device operating schedule; and  
wherein said ephemeral, fungible commodity is a member of the collection comprising DC electricity and AC electricity.


59. A method of planning a device transporting an ephemeral, fungible is commodity based upon a knowledge interval collection containing at least one knowledge interval of said ephemeral, fungible commodity at a time interval containing a price, comprising:  
determining said ephemeral, fungible commodity needs over a planning time interval; and

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examining said knowledge interval collection based upon said ephemeral, fungible commodity needs over said planning time interval to create a device operating schedule; and wherein said ephemeral, fungible commodity is a member of the collection comprising DC electricity and AC electricity.

60. A computing system supporting planning a device transporting an ephemeral, fungible commodity based upon a knowledge interval collection comprising at least one knowledge interval of said ephemeral, fungible commodity at a time interval containing a price, comprising at least one computer with coupled accessible computer memory.

6. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Jeffrey Pwu whose telephone number is (703) 308-7835.



12 November 2003

**JEFFREY PWU**  
**PRIMARY EXAMINER**